

3.17 Relationship between Short-term Uses of the Human Environment and the Maintenance and Enhancement of Long-term Productivity

As described in the introduction to Chapter 3.0, short-term is defined as the 30-year operational life of the mine and 5-year closure and reclamation period; long-term is defined as the future following final reclamation. This section identifies the tradeoffs between the short-term impacts to environmental resources during operation and reclamation versus long-term impacts to resource productivity that extend beyond the end of reclamation. Note that this discussion is not applicable to hazardous materials, public health, environmental justice, and energy requirements and conservation potential.

3.17.1 Geology and Mineral Resources

Short-term lignite mining at the Rusk Permit Area would not affect the long-term potential for development of mineral resources in East Texas. Access to oil and gas resources in the Rusk Permit Area would be temporarily restricted (in the short term) during active mining and reclamation; access to these resources would resume following mining and reclamation.

3.17.2 Water Resources

Short-term groundwater impacts would include effects to groundwater wells within the mine disturbance area, which would be removed, and wells located within the area of potential groundwater drawdown associated with mine-related dewatering of the Carrizo-Wilcox aquifer. These impacts would occur during mining operations and for a period up to approximately 7 to 8 years following the completion of mining until the recovery of groundwater levels in the aquifer. Groundwater quality may be affected within the proposed permit boundary prior to resaturation of the pits within approximately 7 to 8 years after cessation of mining. Sabine would be responsible for the mitigation of mine-related impacts to groundwater wells in compliance with RCT requirements, thereby minimizing the duration of the impact.

Short-term surface water impacts would include impacts to the Sabine River associated with construction of the bridge and dragline walkway; these impacts would include an increased potential for flooding and scour, affecting sediment transport, turbidity, and downstream deposition. During the life-of the mine, runoff volumes would increase; however, releases to the Sabine River would be attenuated by the water management system. In the long-term, runoff modifications would be reduced by recontouring, growth media restoration, and revegetation.

There would be a short-term impact to a total of 303.1 acres of water of the U.S., including 151.2 acres of forested wetlands, 62.6 acres of non-forested wetlands, 22.1 acres of ephemeral streams, 13.5 acres of intermittent streams, 5.4 acres of perennial streams, and 48.3 acres of ponds as a result of mine construction and operation. These impacts would occur incrementally over the 30-year life of the mine. Successful implementation of Sabine's proposed Conceptual Mitigation Plan would reduce these impacts over the long term, and would result in no loss of stream or pond acreage and a long-term net increase of 182.5 acres of wetlands.

3.17.3 Soils

The proposed project would result in short-term impacts to soil productivity; soil productivity would improve with vegetative growth and decomposition. The reclamation goal is to develop productive soils to ensure the long-term success of revegetation, stabilization of the disturbed areas, and soil erosion control. Long-term impacts to soils would be associated with the permanent conversion of 182.5 acres of native non-hydric soils to hydric soils associated with wetland compensatory mitigation.

3.17.4 Vegetation

The proposed project would result in short-term impacts such as the temporary loss of vegetation during project construction and operations. These impacts are expected to end upon completion of mining operations and would be mitigated by reclaiming the disturbed areas.

Impacts to the long-term productivity of the disturbed areas would depend primarily on the effectiveness of reclamation of the disturbed areas. The reclamation goal is to return the disturbed areas to productive post-mining land uses. The revegetation also is expected to stabilize the disturbed surfaces, control soil erosion, and inhibit the establishment of invasive plant species on these areas. It would take up to 15 years for shrub species to fully re-establish and 20 plus years for tree species to re-establish. If initial reclamation of the area occurs in years with above-average precipitation, grasses and shrubs may establish more quickly, thus hastening the succession of a self-sustaining mixture of native vegetation. Long-term, there would be a permanent conversion of 182.5 acres of upland vegetation to wetland vegetation associated with wetland compensatory mitigation.

3.17.5 Fish and Wildlife Resources

The proposed project would result in a short-term incremental loss of aquatic and terrestrial habitat available to fish and wildlife resources, including special status and species of special concern. As discussed above for vegetation, these habitat impacts are expected to end upon completion of mining operations and successful reclamation. Woody species (shrubs and trees) would take longer to fully re-establish, resulting in incremental long-term habitat availability impacts to species that use those habitats.

The potential loss or reduction in available surface water as a result of groundwater level changes could result in long-term changes in wildlife habitat where the surface water sources are hydraulically connected to the Carrizo-Wilcox aquifer within the 5-foot groundwater drawdown area. These changes could affect wildlife habitat until riparian and wetland habitats become re-established following reclamation and groundwater recovery.

Impacts to long-term productivity of aquatic communities (primarily macroinvertebrates) would occur due to the loss of 5.4 acres (2,759 linear feet) of perennial stream habitat, 13.6 acres (73,193 linear feet) of intermittent streams, 22.1 acres (269,047 linear feet) of ephemeral stream habitat, and 48.3 acres of other aquatic habitat (e.g., ponds). Long-term, there would be a permanent conversion of 182.5 acres of upland habitat to wetland habitat associated with wetland compensatory mitigation.

3.17.6 Paleontological Resources

Short-term impacts to paleontological resources would include the loss of fossils, if present, on or within the Wilcox Group or Carrizo Formation within the proposed disturbance area. However, based on the type and prevalence of the fossils that would be lost, the short-term impacts would be minor and would not affect the long-term potential for recovery of similar fossil resources regionally.

3.17.7 Cultural Resources

Short-term and long-term impacts to cultural resources would include the permanent direct loss of 126 identified archaeological sites and historic resources within the initial baseline survey area. Of these sites, 18 are eligible or potentially eligible for listing on the NRHP. Additional archaeological sites and historic resources in as yet unsurveyed portions of the Rusk Permit Area would be identified following future investigations of these areas. As treatment for NRHP-eligible sites would be completed prior to ground disturbance, the scientific information associated with these resources would be preserved for the long-term. Although NRHP-eligible sites would be mitigated through implementation of data recovery or other forms of mitigation, some of the cultural value associated with these sites cannot be fully mitigated; therefore, long-term impacts to these resources are anticipated.

The Proposed Action would result in the loss of cultural resources that are not eligible for the NRHP. Although these sites would be recorded to USACE and THC standards and the information integrated into local and statewide databases, the sites ultimately would be destroyed by project construction, resulting in long-term impacts.

3.17.8 Air Quality

Short-term temporary impacts to air quality would occur from emissions associated with mine construction and operation; however, these impacts would not exceed federal or state AAQS. These impacts would cease following the completion of mining and successful reclamation.

3.17.9 Land Use and Recreation

Short-term use of the permit area for lignite extraction temporarily would replace forestry resources, pastureland, industrial/commercial facilities, developed water resources, churches, a cemetery, and residential areas. Prior uses, dependent on landowners' preferences, would be reinstated after reclamation. Re-establishment of forest lands would require 20 plus years following reclamation to mature, resulting in a long-term impact.

3.17.10 Social and Economic Values

The short-term maintenance of existing employment, population, and economic activity would accrue for the duration of the project, enabling continuation of mining at the South Hallsville No. 1 Mine for an additional approximately 15 years (following the closure of the South Marshall Permit Area). Residents in approximately 256 dwellings within the Rusk Permit Area would be displaced for the duration of project operations (30 years) and reclamation (approximately 5 years).

3.17.11 Transportation

There would be project-related increases in traffic in the study area during the life of the mine. There also would be short-term and long-term impacts as a result of road closures, until reconstructed roads are reopened (approximately 7 to 10 years following road closure).

3.17.12 Noise and Visual Resources

Elevated noise levels would occur in and near the Rusk Permit Area for the life of the mine; however, noise would revert to lower levels at closure. Visual degradation would occur during active mining; however, the rural landscape character gradually would be re-established throughout the disturbance area as reclamation progresses behind mining. It would take several years beyond the life of the mine for adverse visual effects to diminish in the later disturbance areas while shrubs and trees become re-established.